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                        ***   HDNG    1130 CORE IMAGE LOADER-CARD                CIL  000
                        *                                                        CIL00010
                        *             CORE IMAGE LOADER                          CIL00020
                              ABS                                                CIL00030
02EE                          ORG     0                                          CIL00040
                        *                                                        CIL00050
                        *                                                        CIL00060
0000                    ZERO  EQU     0                                          CIL00070
0000 0  7005            TEMP  MDX     START                                      CIL00080
0001 0  1004            MOVE  DC      /1004                                      CIL00090
0002 0  0000            MASK  DC      /0000                                      CIL00100
0003 0  0020                  DC      /0020                                      CIL00110
0004 0  002C            READ  DC      CHECK                                      CIL00120
0005 0  0000                  DC      /0000   A REGISTER BELOW                   CIL00130
0006 0  C0FC            START LD      MASK+1  0000 0000 0010 0000                CIL00140
0007 0  1002                  SLA     2       0000 0000 1000 0000                CIL00150
0008 0  D0FA                  STO     MASK+1  0000 0000 1000 0000 =MASK+1        CIL00160
0009 0  1002                  SLA     2       0000 0010 0000 0000 -              CIL00170
000A 0  D0F5                  STO     TEMP    0000 0010 0000 0000 =TEMP          CIL00180
000B 0  801D                  A       SETUP   0110 0010 0001 1111                CIL00190
000C 0  D01C                  STO     SETUP   0110 0010 0001 1111 =SETUP LD      CIL00200
000D 0  801E                  A       CHECK   0111 0010 0111 1111                CIL00210
000E 0  D01D                  STO     CHECK   0111 0010 0111 1111 =CHECK MD      CIL00220
000F 0  9038                  S       AB+1    0111 0010 0000 0001                CIL00230
0010 0  D037                  STO     AB+1    0111 0010 0000 0001 =AB+1  MD      CIL00240
0011 0  8019                  A       LOOP            1101 0010 0000 0111        CIL00250
0012 0  D018                  STO     LOOP            1101 0010 0000 0111        CIL00260
0013 0  8033                  A       AB              1101 0010 0010 1011        CIL00270
0014 0  8032            J     A       AB                                         CIL00280
0015 0  D031                  STO     AB              1101 0010 0100 1111        CIL00290
0016 0  C0E9                  LD      TEMP    0000 0010 0000 0000                CIL00300
0017 0  80E9                  A       MOVE            0001 0010 0000 0100        CIL00310
0018 0  D0EC                  STO     READ+1          0001 0010 0000 0100        CIL00320
0019 0  80E6                  A       TEMP            0001 0100 0000 0100        CIL00330
001A 0  80E8                  A       MASK+1          0001 0100 1000 0100        CIL00340
001B 0  90E5                  S       MOVE    0000 0100 1000 0000                CIL00350
001C 0  D0E6                  STO     MASK+1  0000 0100 1000 0000 =MASK+1        CIL00360
001D 0  1801                  SRA     1       0000 0010 0100 0000                CIL00370
001E 0  80E1                  A       TEMP    0000 0100 0100 0000                CIL00380
001F 0  80E1                  A       MOVE            0001 0100 0100 0100        CIL00390
0020 0  D0E0                  STO     MOVE            0001 0100 0100 0100        CIL00400
0021 0  8028                  A       SENSE           0001 0101 0000 0111        CIL00410
0022 0  80DD                  A       TEMP            0001 0111 0000 0111        CIL00420
0023 0  D029                  STO     SENSE           0001 0111 0000 0111        CIL00430
0024 0  C0DD                  LD      MASK                                       CIL00440
0025 0  18D8                  RTE     27                                         CIL00450
0026 0  1004                  SLA     4                                          CIL00460
0027 0  18C5                  RTE     5                                          CIL00470
0028 0  D0D9                  STO     MASK                                       CIL00480
0029 0  601F            SETUP LDX     31      LOADS INDEX 2 WITH 31              CIL00490
002A 0  C01F                  LD      FIXIT   LOAD  INTER.ROUTINES ADDR.         CIL00500
002B 0  6006            LOOP  DC      /6006    = STO 2  7 PLACE IRA IN WDS       CIL00510
002C 0  1060            CHECK DC      /1060   =MDX 2 -1 THEN SKIPS OVER BRN      CIL00520
002D 0  70FD                  MDX     LOOP    BRNCH BACK TO LOOP                 CIL00530
002E 0  0803                  XIO     MASK    ALLOWS INTER.LEVELS 0-15           CIL00540
002F 0  08D0            CARD  XIO     MOVE-1  STARTS CARD MOVING                 CIL00550
0030 0  70FF            WAIT  MDX     WAIT    WAIT FOR INTER.,ALSO USED AS       CIL00560
0031    0001            INTER BSS     1       INTER. PROCESSING ROUTINE          CIL00570
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                                                                    PAGE
0032 0  0819                XIO     SENSE-1 GET DEVICE STATUS WORD  CIL0005
                     *                                              CIL0005
                     *      THESE INSTRUCTIONS WILL BE OVERLAID DURING CIL0006
                     *      EXECUTION OF THE CIL. THIS AREA IS CALLED  CIL0006
                     *      THE INPUT BUFFER.                       CIL0006
                     *                                              CIL0006
0033 0  4828                BSC     Z+      IF BIT ZERO OF DSW IS ON,SKIP CIL0006
0034 0  7004        GO      MDX     COLM    BRNCH TO COLM IF HAVE COL REQ CIL0006
0035 0  1002                SLA     2                               CIL0006
0036 0  4828        EXIT    BSC     Z+                              CIL0006
0037 0  70FF        ME      MDX     ME      BRANCH TO ME,HAVE ERROR CIL0006
0038 0  7015                MDX     CARD2   NO ERROR,GO EXECUTE CARD JUST CIL0006
0039 0  08CA        COLM    XIO     READ    READ IN A COLUMN        CIL0007
003A 0  C011                LD      EVEN                            CIL0007
003B 0  4804                BSC     E       NO                      CIL0007
003C 0  7005                MDX     PACK     GO TO PACK             CIL0007
003D 0  1801                SRA     1                               CIL0007
003E 0  D00D                STO     EVEN                            CIL0007
003F 0  C0EC                LD      CHECK   GET COLUMN WORD JUST READ IN CIL0007
0040 0  D0E8                STO     SETUP   SAVE IT IN SETUP        CIL0007
0041 0  7007                MDX     RESET   GO TO RESET             CIL0007
0042 0  1001        PACK    SLA     1                               CIL0007
0043 0  D008                STO     EVEN                            CIL0008
0044 0  C0E7                LD      CHECK   GET COLUMN WORD         CIL0008
0045 0  1808                SRA     8       SHIFT IT INTO POSITION  CIL0008
0046 0  80E2                A       SETUP   ADD ODD COLM WORD TO GET CORE CIL0008
0047 0  0024        AB      DC      /0024   STO 2 79                CIL0008
0048 0  00FE                DC      /00FE                           CIL0008
0049 0  4878        RESET   BOSC    +-Z                             CIL0008
004A 0  0031        FIXIT   DC      INTER   INTER IS INTER ROUTINE ADDR. CIL0008
004B 0  70FF        SELF    MDX     SELF    WAIT FOR INTERRUPT      CIL0008
004C 0  0032        EVEN    DC      /0032                           CIL0008
004D 0  00C3        SENSE   DC      /00C3                           CIL0009
004E 0  4878        CARD2   BOSC    +-Z                             CIL0009
                     *                                              CIL0009
                     *                                              CIL0009
                     *           DATA IN CARD 2 STARTS IN 004F      CIL0009
                     *                                              CIL0009
                     *                                              CIL0009
004F 0  0005        SW1     DC      5           DECREMENT COUNTER TO CIL0009
0050 00 74FF004F            MDX  L  SW1,-1      READ IN ALL BOOTSTRAP CIL0009
0052 0  70DC                MDX     CARD            CARDS           CIL0009
                     *                                              CIL0010
                     *           THE SECTION BELOW MOVES DATA       CIL0010
                     *           FROM LOCATION /00D6 TO /0008       CIL0010
                     *                                              CIL0010
0053 0  622E        CON     LDX   2 29+17                           CIL0010
0054 00 C60000D5            LD   L2 ONE+1                           CIL0010
0056 0  D203                STO   2 J-17                            CIL0010
0057 0  72FF                MDX   2 -1                              CIL0010
0058 0  70FB                MDX     CON+1                           CIL0010
0059 0  1000                NOP                                     CIL0010
005A 0  1000                NOP                                     CIL0010
005B 0  7017                MDX     CD                              CIL0011
005C 0  0085        CK      DC      CK1                             CIL0011
005D 0  0080        FIX     DC      INT                             CIL0011
                     *                                              CIL0011
                     *           END OF INPUT BUFFER                CIL0011
                     *                                              CIL0011
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005E                        ORG     /70                                    CIL011
0070 0  0000        CITST   DC      0           COL. INT. TEST INDICATOR   CIL011
0071 0  1402        CFEED   DC      /1402       IOCC TO FEED CARD          CIL011
0072 0  0000        ER      DC      0                                      CIL012
0073 0  085E        CD      XIO     SCRP2-1     READER READY LOOP          CIL012
0074 00 4C040073            BSC  L  *-3,E                                  CIL012
0076 0  1003                SLA     3                                      CIL012
                    *                                                      CIL012
                    *                                                      CIL012
                    *           DATA IN CARD 3 STARTS IN /0077             CIL012
                    *                                                      CIL012
                    *                                                      CIL012
0077 00 4C10007B            BSC  L  *+2,-                                  CIL012
0079 0  08F6                XIO     CFEED-1     LAST CARD FEED OUT         CIL013
007A 0  70F8                MDX     CD                                     CIL013
007B 0  1810                SRA     16          RESTORE COLUMN INT.        CIL013
007C 0  D0F3                STO     CITST       TEST INDICATOR             CIL013
007D 0  0882                XIO     MOVE-1      START CARD MOVING          CIL013
007E 0  3000        WAIT3   WAIT                                           CIL013
007F 0  70F3                MDX     CD                                     CIL013
                    *                                                      CIL013
                    *       INTERRUPT SERVICE                              CIL013
                    *                                                      CIL013
0080    0001        INT     BSS     1           ENTRY                      CIL014
0081 0  0850                XIO     SCRP2-1     SENSE DSW WITH RESET       CIL014
0082 0  4828                BSC     Z+          TEST FOR COL. INT.         CIL014
0083 0  7011        GO1     MDX     COLM1       YES - SERVICE COLM.        CIL014
0084 0  1002                SLA     2           NO -                       CIL014
0085 0  4828                BSC     +Z                                     CIL014
0086 0  D0EB                STO     ER          SET ERROR INDICATOR        CIL014
                    *                                                      CIL014
                    *       OP COMPLETE PROCESSING                         CIL014
                    *                                                      CIL014
0087 0  C035        EOC1    LD      LAB+3       INITIALIZE COLUMN          CIL015
0088 0  D017                STO     GOB+5       INTERRUPT ROUTINE          CIL015
0089 0  904A                S       ONE                                    CIL015
008A 0  D00D                STO     LOOP1+1                                CIL015
                    *                                                      CIL015
                    *           RESTORE COLUMN INTERRUPT                   CIL015
                    *           SERVICE ROUTINE                            CIL015
                    *                                                      CIL015
008B 0  C046                LD      RTEXX                                  CIL015
008C 0  D00E                STO     GOB                                    CIL015
008D 0  D00B                STO     GOB-2                                  CIL016
                    *                                                      CIL016
008E 0  C0E3                LD      ER          GET ERROR TEST INDICATOR   CIL016
008F 0  7098                MDX     FDCHK                                  CIL016
0090 0  00B5        RED     DC      CK1                                    CIL016
0091 0  1204                DC      /1204                                  CIL016
                    *                                                      CIL016
                    *       READER ERROR STOP                              CIL016
                    *                                                      CIL016
0092 0  D0DF        ERSTP   STO     ER          RESET ERROR INDICATOR      CIL016
0093 0  3000                WAIT                                           CIL017
0094 0  7033                MDX     EOP-2                                  CIL017
                    *                                                      CIL017
                    *       COLUMN INTERRUPT PROCESSING                    CIL017
                    *                                                      CIL017
                    *       THIS ROUTINE SERVICES COLUMN INTERRUPTS AND    CIL017
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                        *       PACKS 4 COLUMNS INTO 3 WORDS.                                   CIL01760
                        *       IT FILLS THE BUFFER CALLED INPUT                                CIL01770
                        *                                                                       CIL01780
0095 0  08FA            COLM1   XIO     RED                                                     CIL01790
0096 0  D0D9                    STO     CITST       SET COL. INT. TEST IND.                     CIL01800
0097 00 C4000032        LOOP1   LD   L  INPUT-1                                                 CIL01810
0099 0  18D0                    RTE     16                                                      CIL01820
009A 0  C01A                    LD      CK1                                                     CIL01830
009B 0  18D0            GOB     RTE     16                                                      CIL01840
009C 00 D4800098                STO  I  LOOP1+1                                                 CIL01850
009E 0  18D0                    RTE     16                                                      CIL01860
                        *                                                                       CIL01870
                        *                                                                       CIL01880
                        *               DATA IN CARD 4 STARTS IN 009F                           CIL01890
                        *                                                                       CIL01900
                        *                                                                       CIL01910
009F 00 D4000033                STO  L  INPUT                                                   CIL01920
00A1 00 74FC009B                MDX  L  GOB,-4                                                  CIL01930
00A3 0  C0F7                    LD      GOB                                                     CIL01940
00A4 0  F009                    EOR     SENS1                                                   CIL01950
00A5 00 4C1800B0                BSC  L  NEW,+-                                                  CIL01960
00A7 00 74010098                MDX  L  LOOP1+1,1                                               CIL01970
00A9 00 740100A0                MDX  L  GOB+5,1                                                 CIL01980
00AB 00 74040099                MDX  L  GOB-2,4                                                 CIL01990
00AD 0  4878            WAIT1   BOSC    +-Z                                                     CIL02000
00AE 0  18C0            SENS1   DC      /18C0                                                   CIL02010
00AF 0  70CE                    MDX     WAIT3       WAIT FOR NEXT INT                           CIL02020
00B0 00 74100098        NEW     MDX  L  GOB,16                                                  CIL02030
00B2 00 74F40099                MDX  L  GOB-2,-12                                               CIL02040
00B4 0  70F8                    MDX     WAIT1                                                   CIL02050
                        *                                                                       CIL02060
                        *       STORES BUFFER TO CORE                                           CIL02070
                        *                                                                       CIL02080
00B5 0  0000            CK1     DC      0           COLUMN BUFFER (FROM CARD)                   CIL02090
00B6 00 C4000035        DAT     LD   L  INPUT+2     GET TYPE AND COUNT                          CIL02100
00B8 0  E00B                    AND     N           REMOVE COUNT                                CIL02110
00B9 0  D001                    STO     LAB+1       STORE COUNT IN NEXT INST.                   CIL02120
00BA 00 66000000        LAB     LDX  L2 *-*         LOAD IR2 WITH COUNT                         CIL02130
00BC 00 C4000033                LD   L  INPUT       GET LOADING ADDRESS                         CIL02140
00BE 0  9015                    S       ONE                                                     CIL02150
00BF 0  D003                    STO     LOOP3+3     SET UP DATA STORE INSTR.                    CIL02160
00C0 00 C6000035        LOOP3   LD   L2 INPUT+2     GET DATA WORD                               CIL02170
00C2 00 D6000000                STO  L2 *-*         STORE DATA WORD                             CIL02180
00C4 0  72FF            N       MDX   2 -1          DECR IR2 BY 1,IF COUNT=0 SK                 CIL02190
00C5 0  70FA                    MDX     LOOP3       CONTINUE LOADING FROM INPUT                 CIL02200
                        *                                                                       CIL02210
                        *                                                                       CIL02220
                        *               DATA IN CARD 5 STARTS IN 00C7                           CIL02230
                        *                                                                       CIL02240
                        *                                                                       CIL02250
00C6 00 C4000035                LD   L  INPUT+2     GET TYPE                                    CIL02260
00C8 00 4C500004                BOSC L  BSIXX,-     END-OF-PROGRAM TEST                         CIL02270
00CA 00 67800067        EOP     LDX  I3 INPUT+52    YES - SET IR-3 TO TV ADDR.                  CIL02280
00CC 0  0805                    XIO     SCRP2-1     LAST CARD TEST                              CIL02290
00CD 0  1003                    SLA     3                                                       CIL02300
00CE 0  4828                    BSC     +Z                                                      CIL02310
00CF 0  08A0                    XIO     CFEED-1     YES - FEED OUT                              CIL02320
00D0 00 4CC00068                BOSC I  INPUT+53     GO TO EXECUTE                              CIL02330
00D2 0  18D0            RTEXX   RTE     16          CONSTANT FOR REST. RTE                      CIL02340
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00D3 0  1703          SCRP2 DC      /1703       IOCC TO SENSE DSW          CIL02350
00D4 0  0001          ONE   DC      /0001                                  CIL02360
00D5 0  709D                MDX     CD                                     CIL02370
00D6                        ORG     /4                                     CIL02380
                      *                                                    CIL02390
                      *     THIS SECTION WAS LOADED INTO CORE INITIALLY     CIL02400
                      *     AT LOC. /00D6.  IT IS MOVED TO PROPER ADDRESS  CIL02410
                      *     DURING EXECUTION OF PROGRAM LABLED CON.        CIL02420
                      *     THIS CODING PROCESSES CHECK SUMS, HANDLES      CIL02430
                      *     PROGRAM STOP, ACCOMODATES ERRORS, AND          CIL02440
                      *     SETS UP THE INTERRUPT TV.                      CIL02450
                      *                                                    CIL02460
0004 0  4001          BSIXX BSI     LEV5        SET RETURN ADDRESS         CIL02470
0005 0  706D                MDX     CD                                     CIL02480
0006 0  0000          LEV5  DC      0           LEVEL 5 ENTRY              CIL02490
0007 0  7006                MDX     *+6         CONTINUE LEVEL 5           CIL02500
0008 0  0080                DC      INT                                    CIL02510
0009 0  0000                DC      0                                      CIL02520
000A 0  0000          IOCCX DC      0           IOCC TO SENSE              CIL02530
000B 0  3F00                DC      /3F00       CONSOLE STATUS             CIL02540
000C 0  0080                DC      INT                                    CIL02550
000D 0  0006                DC      LEV5                                   CIL02560
000E 0  D0FB                STO     IOCCX       SAVE ACCUMULATOR           CIL02570
000F 0  08FA                XIO     IOCCX       SENSE CONSOLE STATUS       CIL02580
0010 0  4828                BSC     Z+          TEST FOR PROGRAM STOP      CIL02590
0011 0  3000                WAIT                YES - STOP                 CIL02600
0012 0  C0F7                LD      IOCCX       RESTORE ACCUMULATOR        CIL02610
0013 00 4CC00006            BOSC I  LEV5        RESTART NEW CARD           CIL02620
0015 0  C01E          CKSUM LD      INPUT+1     TEST CARD CHECK SUM        CIL02630
0016 00 4C1800B6            BSC  L  DAT,+-      IF ZERO, LOAD IMMEDIATELY  CIL02640
0018 00 74010026            MDX  L  CDCNT,1     INCR CARD COUNT BY ONE     CIL02650
001A 0  6236                LDX   2 54                                     CIL02660
001B 0  C00A                LD      CDCNT       ADD CARD COUNT PLUS        CIL02670
001C 00 86000032      OTTO  A     L2  INPUT-1     54 WORDS (72 COLUMNS)    CIL02680
001E 0  4802                BSC     C           IF CARRY,                  CIL02690
001F 0  8007                A       ONE4        ADD ONE                    CIL02700
0020 0  72FF                MDX   2 -1                                     CIL02710
                      *                                                    CIL02720
                      *           DATA IN CARD 6 STARTS IN /00EF           CIL02730
                      *                                                    CIL02740
0021 0  70FA                MDX     OTTO                                   CIL02750
0022 0  9004                S       ONE4        MAKE TWOS COMPLEMENT       CIL02760
0023 00 4C1800B6            BSC  L  DAT,+-      TEST FOR ZERO              CIL02770
0025 0  3000          CK3   WAIT                NO - CHECK SUM ERROR       CIL02780
0026 0  0000          CDCNT DC      0                                      CIL02790
0027 0  0001          ONE4  DC      1                                      CIL02800
0028 00 4C180015      FDCHK BSC  L  CKSUM,+-    BRANCH IF NO READER ERROR  CIL02810
002A 0  C045                LD      CITST       GET COL. INT. INDICATOR    CIL02820
002B 00 4C200030            BSC  L  *+3,Z       TEST FOR ANY COL. INTS.    CIL02830
002D 00 74FF0026            MDX  L  CDCNT,-1    NO, REDUCE CARD COUNT FOR  CIL02840
002F 0  1000                NOP                 RE-READ OF CARD IN FEED    CIL02850
0030 0  1810                SRA     16          YES, CLEAR ACCUM.          CIL02860
0031 0  7C60                MDX     ERSTP                                  CIL02870
                      *                                                    CIL02880
                      *                                                    CIL02890
0033                  INPUT EQU     51          INPUT BUFFER ADDRESS       CIL02900
0032 0  0000                END     TEMP                                   CIL02910
 NO ERRORS
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